

EE / SE 492 Week 5 Status Report

Oct. 28, 2019 - Nov. 8, 2019

Group: sddec19-20

Project: Ultra-thin electronic skin for real-time health Monitoring

Advisor/Client: Liang Dong

Team Members:

Sovann Chak: Software Architect, iOS Developer

Omar El-Sherbiny: Circuit Design of Data Processing and Communication

Justin Gordon: Software Developer, Communication research

Sungmin Kang: Circuit design and analysis of Mobility sensor

Sangwon Lee: Circuit design and analysis of ECG

Passing Week's Accomplishments

Software Engineers

(Sovann)

- Worked with Omar to test a circuit
- Wrote code to dynamically connect sensors to iPhone device, implementing different frameworks to retrieve the newest information from the multiple sensors
- Wrote code for arduino to implement FFT (fast fourier transform) to reduce noise from our sensors (digital filtering)

(Justin)

- Worked on implementing BLE in android application
- Looked into real time graphing apis
- Continued to work on android application

Electrical Engineers

(Omar)

- Built initial data acquisition circuits for the three sensors
- Worked with Sovann to test the circuits for the ECG, EMG, and mobility sensors

- Outputs were displayed on a computer
- Mobility sensor data acquisition is not accurate, and needs refinement
- Completed survey of NFC modules, and purchased a module

(Sungmin)

- Using DATAQ (DI-245), tried to get some ECG data in different kind of four sessions.
- Thought about the amplifier to amplify the ECG signal and get the data at DATAQ.

(Sangwon)

- Using DATAQ (DI-245), tried to get some ECG data in different kind of four sessions

Individual Contributions

Team Member	Contribution	Weekly Hrs	Total Hrs
Sovann	Worked on arduino code, tested circuits, and wrote iOS code.	6	87
Justin	Continued refining implementation of graphs and looked into android BLE libraries	6	79
Omar	Ran data acquisition tests for all sensors, and completed survey of NFC modules	10	76
Sungmin	Be familiar with DATAQ (DI-245), and understood how to get four different sessions. Also, thought about the amplifier to amplify ECG signal.	6	87
Sangwon	Analysing and combine sensor and communication modules	6	87

Plans for Next Week

- (Sovann) Finish implementing FFT on sensor data before sending to iPhone
- (Sovann) Continue to develop iOS software
- (Sovann) Research into NFC libraries for iOS
- (Sungmin) Build amplifier to amplify ECG signal
- (Sungmin) Fabricate the sensors using the fusion
- (Sungmin)
- (Sangwon) Build amplifier to amplify ECG signal
- (Sangwon) Fabricate the sensors using the fusion
- (Justin) Keep working on BLE interfacing
- (Justin) Work on implementing real time graphs
- (Omar) Refine data acquisition circuit for the mobility sensor, and test using actual sensor
- (Omar) Work on data transmission through NFC module